

REMARKS

Claims 1-8 are pending in this application. Claim 2 is amended hereinl.

Figure 2 should be designated by a legend such as –Prior Art– because only that which is old is illustrated (Office action point 1).

In the Request for Approval of Drawing Changes, a change labeling Figure 2 as –Prior Art– is proposed.

Claim 2 is objected to (Office action point 2).

The objection is overcome by the amendment to claim 2, in which the recitation of “a di-2-ethylhexyl phthalate and/or a high-grade alcohol phthalate” has been replaced by -- at least one of di-2-ethylhexyl phthalate and a high-grade alcohol phthalate --.

Claims 1, 2, and 4-6 are rejected under 35 U.S.C. 103(a) as unpatentable over Iversen (U.S. Pat. No. 3,816,641) in view of Wada (U.S. Patent No. 4,517,332) (Office action point 4).

The rejection of claims 1, 2, and 4-6 is respectfully traversed.

In the rejection, the Examiner has taken Iversen’s preform 14 as the recited stopper of the claims and underwater cable 12 as the recited connector.

Wada discloses a rubber composition containing a silicone raw rubber. In the rejection, the Examiner substitutes the rubber composition of Wada for the thermoplastic material in Iversen, citing as motivation that “the rubber composition taught by Wada has an excellent non-tackiness such that it can be easily handled during the connection process.”

In traversing the rejection, Applicants note that MPEP 2142 provides:

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on applicant’s disclosure.”

Applicants assert that there is neither a clear suggestion or motivation for the proposed substitution nor a reasonable expectation of success.

Applicants note that the Examiner’s proposed combination requires that Wada’s rubber composition be substituted for both the thermoplastic material in Iversen’s preform 14 **and** sheath 28, since in Iversen these are both the same material. Iversen states in column 2, lines 40-43: “The cable 12 includes a sheath 28 of a flexible thermoplastic material such as polyethylene, which resists degradation in the underwater environment over long periods of time. The preform 14 is constructed of the **same thermoplastic material as the cable sheath**” (Emphasis added). The reference also indicates that the preform is heat-bonded to the sheath (column 3, lines 48-50; column 4, lines 33-36). It is therefore apparently necessary in Iversen that the preform and sheath be of the same material.

The only example of the thermoplastic material mentioned in Iversen is polyethylene. Moreover, Iversen clearly states that the thermoplastic material “resists degradation in an underwater environment for a long period of time even when subjected to the high pressures that exist at great ocean depths” (column 2, lines 36-38). This property is clearly a necessity, given that the sheath of

the cable itself is made of this thermoplastic material. Not many materials would be expected to be suitable for this purpose, and Iversen lists only one.

It is not clear, however, that any of Wada's rubber compositions would be suitable for the sheath of an underwater cable. Wada discloses a composition useful in a belt for carrying tacky substances such as oil sand (column 1, lines 11-15). There is no mention of underwater use, and Applicants assert that it is unlikely that Wada's compositions would function in such an application; almost certainly they would fail. Therefore, there is not a reasonable expectation of success for substitution of Wada's composition as the preform in Iversen.

Moreover, there is no disclosure in Wada that indicates that Wada's composition in the form of Iversen's preform would form a useful heat bond to a sheathing of Wada's composition, or of any material, when heated. Therefore, there is no reasonable expectation of success of Wada's composition successfully functioning in the heat bonding of the preform to the sheath in Iversen.

Applicants also note that the Examiner's stated motivation for the combination, that "the rubber composition taught by Wada has an excellent non-tackiness such that it can be easily handling during the connection process," is of unclear relevance. Applicants are uncertain which "connection process" is referred to, and Iversen does not appear to discuss tackiness of the preform or sheath as a design issue.

With regard to claims 4-6, the Examiner states that Iversen discloses "a rubber stopper including a plasticizer soluble mutually with the resin material of the covering layer (re claims 4-6)". However, the Examiner has not cited where Iversen discloses plasticizer, and Applicants cannot find this teaching in the reference. Applicants assert that there is no suggestion for plasticizer in Iversen's

preform and sheath.

Claims 1, 2, and 4-6 are therefore novel and non-obvious over Iversen and Wada, taken separately or in combination.

Claim 3 is rejected under 35 U.S.C. 103(a) as unpatentable over Iversen (U.S. Pat. No. 3,816,641) in view of Wada (U.S. Patent No. 4,517,332) and further in view of Yoshino (U.S. Patent No. 5,519,082) (Office action point 5).

The rejection of claim 3 is respectfully traversed. As noted above, Applicants assert that no *prima facie* case of obviousness can be made for independent claim 1 using the combination of Iversen with Wada.

Yoshino is further cited for a “rubber composition including a compound comprising at least one of silylidine groups.” The Examiner substitutes this composition for Iversen’s preform.

Applicants note that if Yoshino’s rubber composition is substituted for Iversen’s preform, then Wada’s composition cannot also be substituted for the preform. That is, there is no clear way to combine both Yoshino and Wada with Iversen. Applicants’ arguments presented above regarding the substitution of Wada’s composition into Iversen also apply to the substitution of Yoshino’s compositions.

First of all, Yoshino discloses a curable silicone rubber that is suitable for a variety of fields and that has weather resistance, durability, release properties, and heat resistance. However, there is no discussion of suitability for underwater sheathing, and the Examiner has provided no basis in technical reasoning that this compound would be suitable for underwater use.

Secondly, Yoshino's composition is vulcanized and cured. In addition, it has excellent release properties. These properties suggest away from use in heat bonding. Applicants can find no disclosure in Yoshino indicating that a preform and a sheath of Yoshino's composition would be bondable by heating, as a combination of Yoshino and Iversen would require in order to suggest claim 1.

Both of these points argue that there is no reasonable expectation of success for the combination of Yoshino and Iversen.

Applicants therefore assert that claim 3 is novel and non-obvious over Iversen, Wada and Yoshino, taken separately or in combination.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as unpatentable over Iversen (U.S. Pat. No. 3,816,641) in view of Yoshino (U.S. Patent No. 5,519,082) (Office action point 6).

The rejection of claims 7 and 8 is respectfully traversed.

First of all, the Examiner's proposed combination with regard to claim 7 requires substitution of Yoshino's rubber composition for Iversen's preform 14 (as the recited stopper). Applicants' have argued above with regard to claim 3 that such a proposed combination of Yoshino and Iversen has no reasonable expectation of success.

Moreover, claim 7 recites that the rubber stopper is disposed between the waterproof connector and a covered cable. This recitation is structurally inconsistent with the Examiner's assignment of Iversen's preform 12 as the stopper and sheath 28 as the covering layer of the covered cable. Iversen does not appear to disclose or suggest the general structure recited in claim 7.

Amendment under 37 CFR 1.111
Masahiro KANDA

U.S. Patent Application Serial No. 10/050,170
Attorney Docket No. 020066

Therefore, Applicants assert that no *prima facie* case of obviousness can be made for claims 7 and 8 using Iversen and Yoshino, and that claims 7 and 8 are novel and non-obvious over these references.


If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned Agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Version with markings to show changes made
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Amendment under 37 CFR 1.111
Masahiro KANDA

U.S. Patent Application Serial No. 10/050,170
Attorney Docket No. 020066

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claim 2 as follows:

2. (Amended) The rubber stopper set forth in claim 1 wherein the material bonding the covering layer to the rubber stopper is an oleo-rubber that includes an organic rubber as a major constituent and a at least one of di-2-ethylhexyl phthalate ~~and/or~~ and a high-grade alcohol phthalate.